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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,765	07/15/2003	Kazuaki Sumita	0171-0991P	6014
2292	7590	02/07/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			SELLERS, ROBERT E	
			ART UNIT	PAPER NUMBER
			1712	
DATE MAILED: 02/07/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/618,765	Applicant(s) SUMITA ET AL.	
	Examiner Robert Sellers	Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-8 is/are pending in the application.
- 4a) Of the above claim(s) 3-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The election with traverse of Group I in the non-Final rejection mailed September 22, 2005 is acknowledged. The traversal is on the grounds that there are overlapping technical features and the lack of undue burden to search all three groups. This is not found persuasive because the intermediate product of the epoxy resin, aromatic amine and inorganic filler without the silicone-modified resin of Group II and the semiconductor device encapsulated therewith of Group III is useful other than with the silicone-modified resin and in an encapsulated semiconductor device, regardless of whether there are overlapping features. The separate classifications of the groups establishes an undue search burden.

The requirement is still deemed proper and is therefore made FINAL.

This application contains claims 3-5 drawn to inventions nonelected with traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144 and MPEP § 821.01).

2. The 35 U.S.C. 102(b) rejection over Japanese Patent Nos. 9-176294 or 10-158366 is rescinded due to the newly limited epoxy resin to aromatic amine molar ratio of from 0.7:1 to less than 0.9:1 as supported by page 7, lines 18-19 of the specification. Japanese '294 (page 2, paragraph 6, lines 13-14) and '366 (page 2, paragraph 9, lines 3-4) disclose decreases in damp-proofing and dependability due to the presence of unreacted amine groups at a molar ratio of below 0.9:1.

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3. The 35 U.S.C. 103(a) rejection over Japanese Patent No. 60-92318 in view of Japanese Patent No. 9-176294 is withdrawn because the equivalent of Sato et al. Patent No. 4552,907 (both Japanese '318 and Sato et al. have the common Japanese priority application no. 1984- or 59-133877) reveals the composition in solid form (col. 9, lines 55-60 and col. 10, lines 16-17) as opposed to the claimed liquid composition containing a liquid epoxy resin.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 6-8 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the exclusion of the alkoxy-bearing silane coupling agent (page 10, lines 19-21), does not reasonably provide enablement for the composition being "substantially" free thereof. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

4. The sole reference to the absence of the alkoxy-bearing silane coupling agent is its exclusion, as opposed to the claimed composition being "substantially free" thereof. Any person skilled in the art could not ascertain what maximum proportion is permissible within the term "substantially."

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 6-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. The metes and bounds of the term "substantially" used to denote the absence of the alkoxy-bearing silane coupling agent in claim 1, lines 13-14 is unclear since the specification on page 10, lines 19-21 does not indicate what maximum amount is deemed to be the limit for the term.

Claims 1, 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. 64-65120.

The rejection is maintained for the reasons of record set forth in the non-Final rejection mailed September 22, 2005. The arguments filed January 23, 2006 have been considered but are unpersuasive.

6. Japanese '120 discloses an equivalent ratio of diaminodiphenylmethane to liquid epoxy resin of 1.1:1 or 0.9:1. The newly claimed maximum of less than 0.9:1 does not establish the patentability of the claimed composition since "it is not inventive to discover the optimum or workable ranges by routine experimentation (*In re Aller*, 105 USPQ 233, 235, CCPA 1955)."

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The evidence presented in the declaration filed January 23, 2006 in Table A does not distinguish between the molar ratio of 0.7 and 0.8 within the claimed parameters (Examples 9 and 10) and the ratio of 0.9 representative of Japanese '120 (Example 11).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese '120 as applied to the claims hereinabove, and further in view of Japanese Patent No. 10-231351.

7. The claimed silica filler in spherical form is not recited. Japanese '351 discloses a mixture of a liquid epoxy resin, an alkylated diaminodiphenylmethane curing agent (page 5, paragraph 15, line 10) and spherical silica (page 3, paragraph 10). It would have been obvious to utilize the silica filler of Japanese '120 in a spherical shape as taught by Japanese '351 in order to reduce the coefficient of linear expansion.

Claims 1, 2 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. 10-231351 in view of Sato et al. Patent No. 4,552,907.

Japanese Patent Nos. 9-176287 and 10-158365 are no longer relied upon since the disclosed weight ratio of liquid epoxy resin per combined weight of epoxy resin and alkylated diaminodiphenylmethane of from 0.65 to 0.80 is precluded by the claimed molar ratio. Japanese Patent No. 1-152120 is rescinded due to the lack of an inorganic filler.

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8. Japanese '351 epouses a mixture of a liquid epoxy resin, an alkylated diaminodiphenylmethane curing agent (page 5, paragraph 15, line 10) and spherical silica (page 3, paragraph 10).

9. The claimed epoxy resin to aromatic amine molar ratio of of from 0.7:1 to 0.9:1. Sato et al. (col. 3, lines 63-66) teaches a mixture of an epoxy resin such as a glycidyl ether (col. 4, lines 6-7), a silica inorganic filler (col. 8, lines 35-37) and an aromatic amine hardening agent in an epoxy groups:hardening agent functional groups of between about 0.5:1 to 1.5:1 (col. 4, lines 31-40) which converts to a hardening agent functionality:epoxy groups equivalent ratio of from 0.67:1 to 2:1. The equivalent ratio is identical to the molar ratio when utilizing a diglycidyl ether and an aromatic diamine.

10. It would have been obvious to use the alkylated diaminodiphenylmethane curing agent of Japanese '351 at an equivalent ratio within the parameters of Sato et al. in order to optimize the shelf life, curing speed and the desired thermal and mechanical properties after curing (Sato et al., col. 4, lines 35-38). The equivalent ratio is not compromised by the form of the composition since the epoxy and amino groups react whether the composition is formulated as a liquid or solid.

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The amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Sellers whose telephone number is (571) 272-1093. The examiner can normally be reached on Monday to Friday from 9:30 to 6:00. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).



Robert Sellers
Primary Examiner
Art Unit 1712